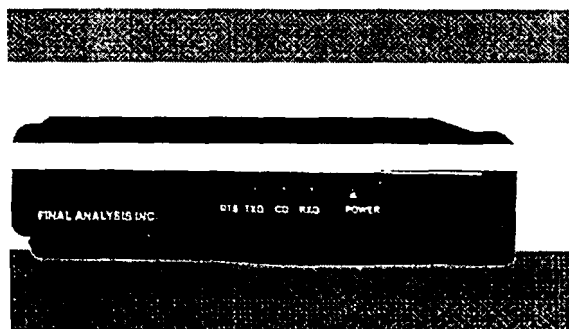


The User Segment

Prototype Unit



26-Pin RS-232 Connector

- ◆ 400 MHz Receive, 450 MHz Transmit, GMSK modulation
- ◆ 1.2, 4.8, and 9.6 Baud Modulation Rates
- ◆ Forward Error Correction
- ◆ 12 Volt Power
- ◆ Environmentally Sealed (if required)
- ◆ Next Version has embedded 386

Optional GPS Card:

- ◆ Mounts Internal to the RT
- ◆ 1 Watt Power Consumption
- ◆ Latitude, Longitude, Altitude, and Time-of-Day Output
- ◆ Data Inserted Into RT Uplink Message As Required

The User Segment

Commercial Version

- Digital “Software Radio” with Processor and Memory
- Low part count commercial design for low cost mass production
- Flexible design for a variety of applications

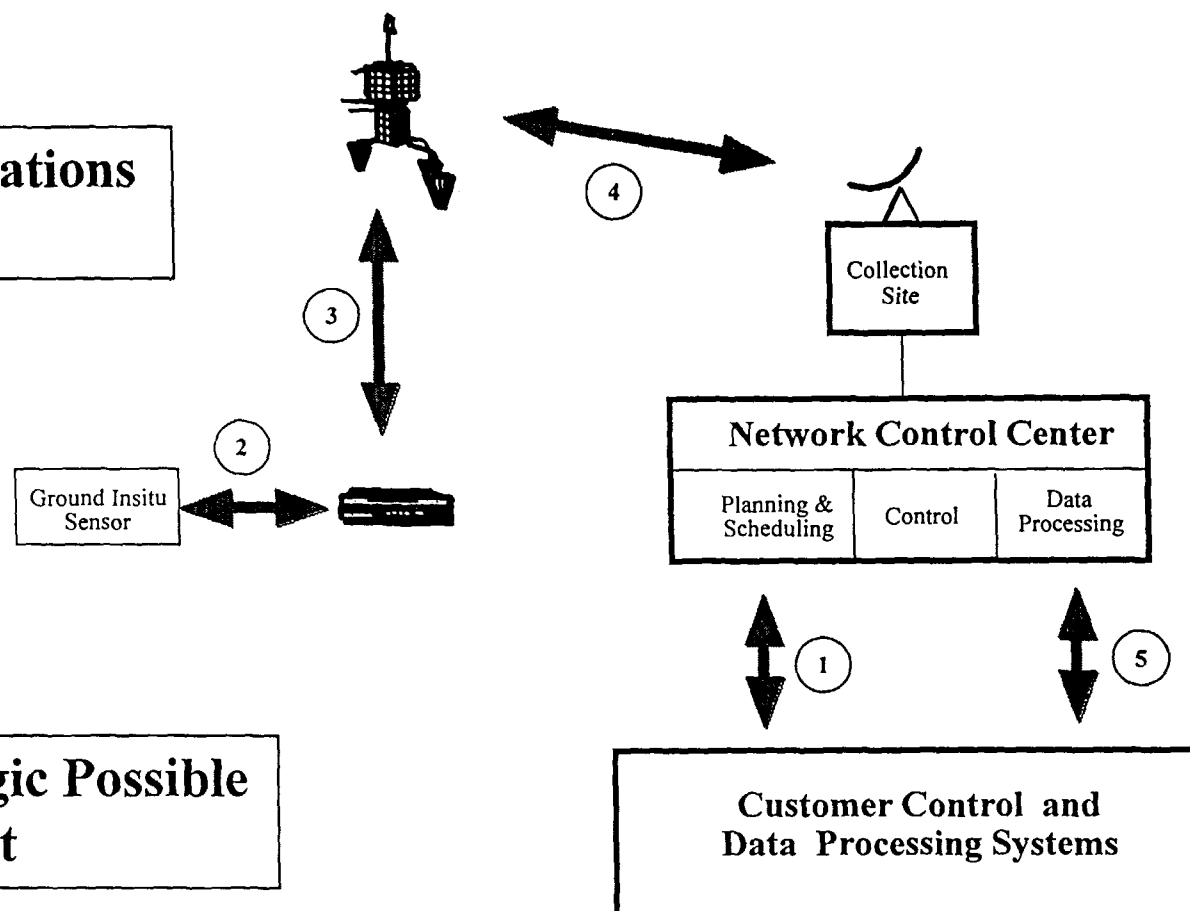
1. Simplex Mode	Simplex Mode
2. Duplex Mode	Duplex Mode
3. Half Duplex Mode	Half Duplex Mode
4. Message Mode	Message Mode
5. Voice Mode	Voice Mode
6. Voice Mode	Voice Mode

Variations in packaging, mounting, power, environmental specifications, memory capacity, etc..

The Operations Segment

Flexible Operations Design

Five (5) Main Operations Processes



Application-Smart Logic Possible at Each Point

The Operations Segment

1. Polling and Control Plan:

- Customer “Polling & Control Plan” (defined, loaded into satellite and/or RT)
- Near Real Time Polling and Control Requests
- Onboard, RT, or NCC-Initiated Automatic Polling and Control Requests

2. Two-Way RT-to-Sensor Suite Communication Operations: (Data Read)

- RT or Sensor-Initiated based on time, data presence, or alert logic
- Limited by RT and/or Sensor Capacity

The Operations Segment

3. Two-Way Satellite-to-RT Communication Operation: (Data Retrieval)

- Satellite-Initiated Communications
- Ground RT “Event-Initiated” Communications

4. Two-Way Satellite-to-Collection Site Communication Operation: (Data Retrieval)

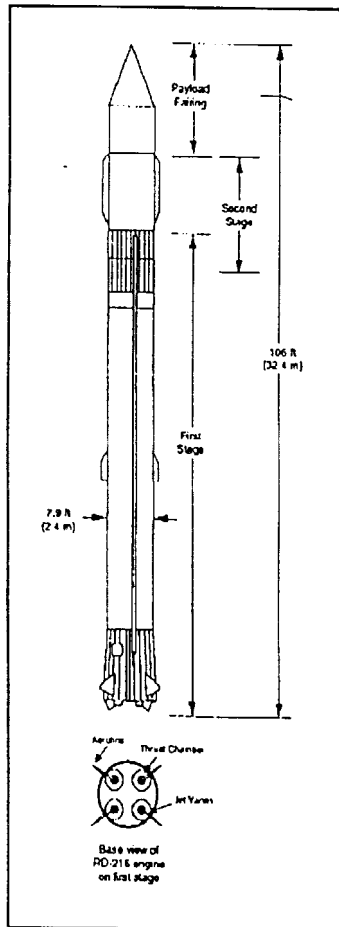
- Satellite or Ground Initiated Communication
- High Speed Dump of Selected Messages
- Near Real Time if Collections Site is in Uplink RT Footprint (5600 km)
- Stored, Carried to Intended Destination (earth orbit period 100 mins)
- Dumped to Final Analysis Sites and NCC, or Customer-Unique Site

The Operations Segment

5. Collection Site-to- Data Processing & Control Site Communication:

- Collect Data From Final Analysis NCC or from Your Collection Site
- Push or Pull Technique From NCC
- Variety of Methods (Internet, Dial-Up Modem, Storage Media, etc.)
- Polling and Control Plan Inputs to Final Analysis NCC
- NCC Customer Service

Delivery to Orbit



● Vehicle:

- 34.4 meters high
- 2.4 meters in diameter
- 109 tonnes in weight

● Two-Stage bipropellant Fueled

- **First stage:**
 - » 2 engines, double ported
 - » 380,000 force pounds of thrust in vacuum
 - » Thrust vanes for vector control
- **Second stage:**
 - » Single engine rated at 35,000 pounds thrust
 - » Four small single axis gimbaled engines for thrust vector control

● Guidance System

- Integrating gyro package and stored guidance program

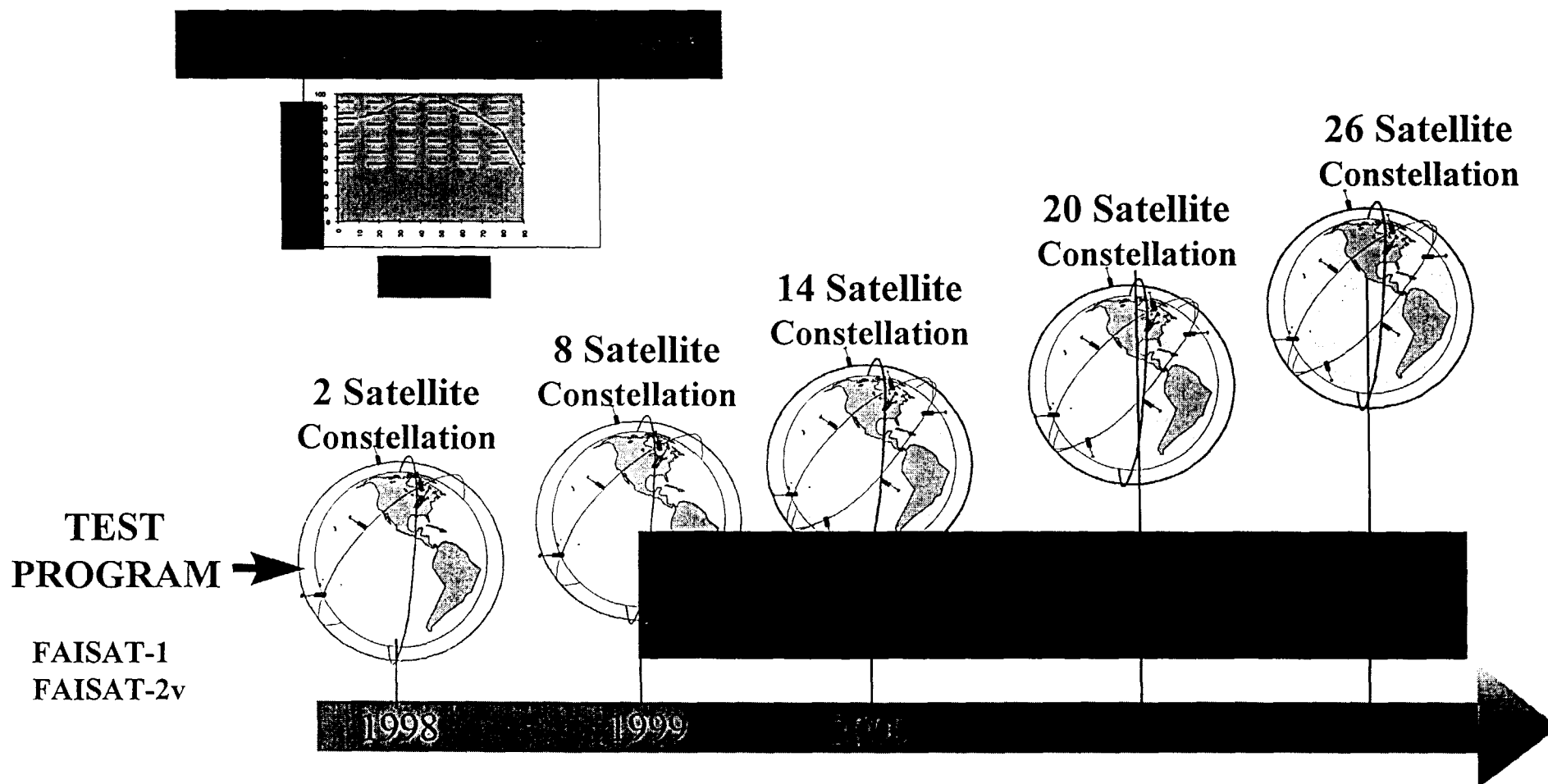
● Payload Volume

- Fairing 2.4 meter diameter
- 5.72 meter high
- Cylindrical payload volume, 1.8 meter high
- Conical (19 degree) payload volume, 2.9 meter

- Over 700 flights total
- Over 300 orbital flights. 400 suborbital
- Up to 8 satellites in one flight
- Since 1986, 99.1% Success Rate (229 for 231)

Cosmos

Constellation Deployment



A Test Program



- ◆ **FAISAT-2v Communications Test Program:** A follow-on mission to our FAISAT-1 to provide a test bed for a variety of transmissions, to collect RSSI measurements around the globe, and to demonstrate store and forward telecommunications technology.



To be launched in early 1997 on a Cosmos launch vehicle, FAISAT-2v will further demonstrate FAI's corporate capability, innovation, spacecraft, and launch vehicle technology.

1. International Frequency Sharing Tests
2. Pilot Demonstrations
3. Performance Tests

Frequency Sharing Tests

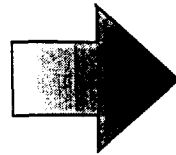
Test Program Sites:
(experimental authorization)

- Brazil
- Colombia
- Germany
- Indonesia
- Mongolia
- Poland
- Russia
- Senegal
- United States
- Uruguay

The Market

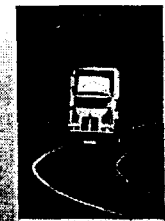
Service Capability

- Data Acquisition
- Asset Monitoring
 - Routine Monitoring
 - Event Monitoring and Alert
- Asset Tracking
- Supervisory Control
- Two-Way Messaging
- E-Mail & File Transfers
- Emergency Services



Target Industries

- ◆ Utility Industry
- ◆ Transportation Industry
- ◆ Scientific Organizations
- ◆ Environmental Agencies
- ◆ Oil & Gas Industry
- ◆ Automotive Industry
- ◆ Agriculture
- ◆ Personal Messaging
- ◆ Health
- ◆ Business Services



Government or Commercial

Application & Services

Market Segment	Service
Transportation: - Trucking - Shipping Container - Rail - Cargo	<ul style="list-style-type: none"> • Tracking (location determination) • Route deviation alerts • Open/Close alerts (electronic customs surveillance) • Weight sensors • Refrigeration unit monitoring, control, and alert
Utility: - Water - Gas - Electric	<ul style="list-style-type: none"> • Automated meter reading • Tamper alert, power outage alert • Load control • Load profiles • Information to the consumer • Service connect/disconnect • Substation & Transmission grid monitor and alert

Applications & Services

Market Segment	Service
Environmental	<ul style="list-style-type: none"> • Field data collection (UV, volcanoes, water quality, animal tracking, soil monitor, weather data, etc.) • Field unit monitor and control • Hazard alerts
Agribusiness	<ul style="list-style-type: none"> • Crop conditioning monitoring • Irrigation, pesticide, fertilizer application control • Supply monitoring (feed bins, fertilizers, etc.) • Poultry, hog, dairy house monitoring and alert
Automotive	<ul style="list-style-type: none"> • Smart car applications • Roadside assistance alerts (user activated, air bag activated, etc.) • Stolen vehicle location determination

Applications & Services

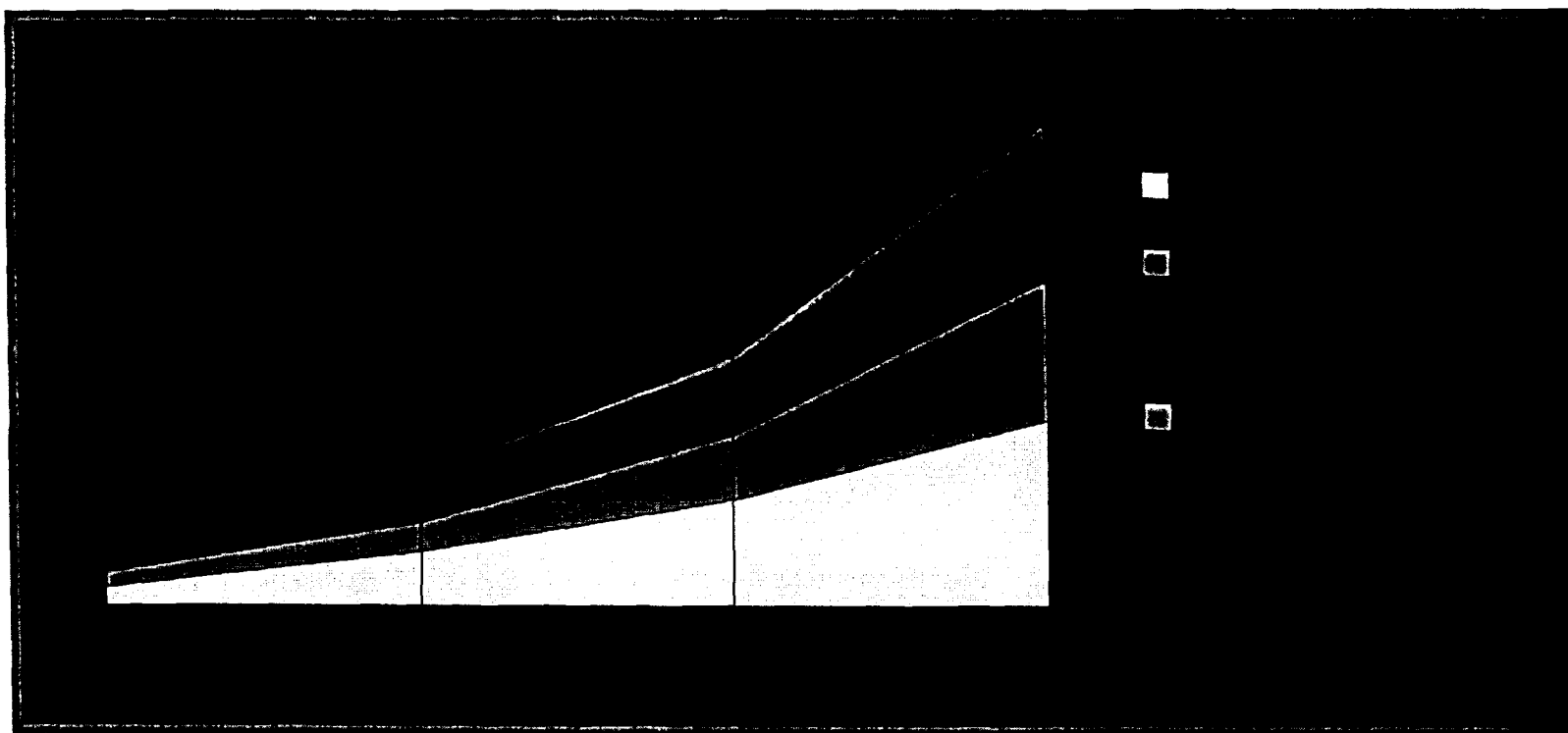
Market Segment	Service
Security	<ul style="list-style-type: none"> • Intrusion alerts • Stolen property alerts and location determination
Personal Messaging & EMail	<ul style="list-style-type: none"> • Two-way alphanumeric messaging • Voice mail • Remote email access
General Industrial	<ul style="list-style-type: none"> • Inventory monitor • Field equipment monitor and control
Health	<ul style="list-style-type: none"> • Remote monitor of patient physiological functions by doctor

Applications & Services

Market Segment	Service
Oil & Gas	<ul style="list-style-type: none">• Remote well and substation monitor and control• Transmission grid monitor and control
Emergency	<ul style="list-style-type: none">• Emergency alerts (hikers, skiers, climbers, maritime, etc.)
Retail	<ul style="list-style-type: none">• Vending machine monitor and control• Copier machine monitor, analysis, and control• Point of sale reporting

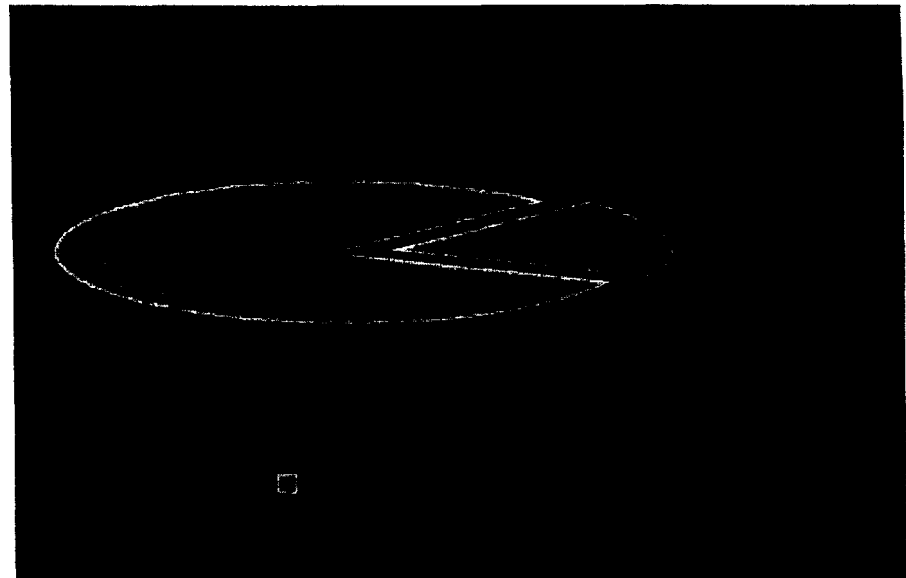
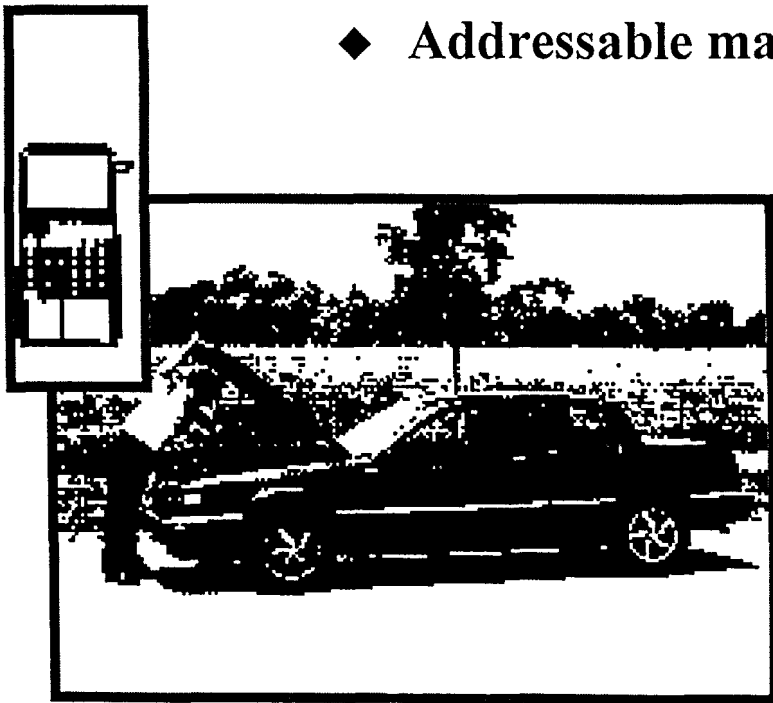
Market Size

Independent Study of four (4) main market segments has yielded a \$5.5B market by 2002.



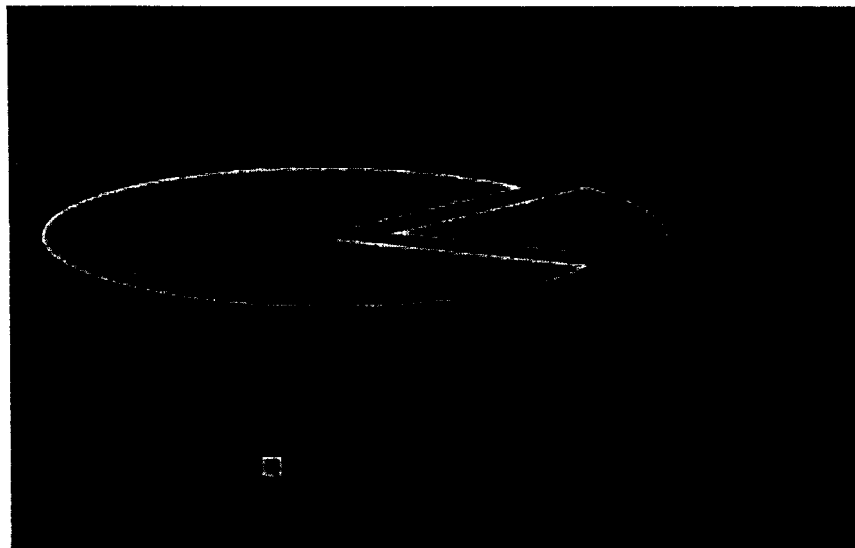
Market Size: Vehicle Messaging

- ◆ Addressable market size: \$2.1 billion in 2002



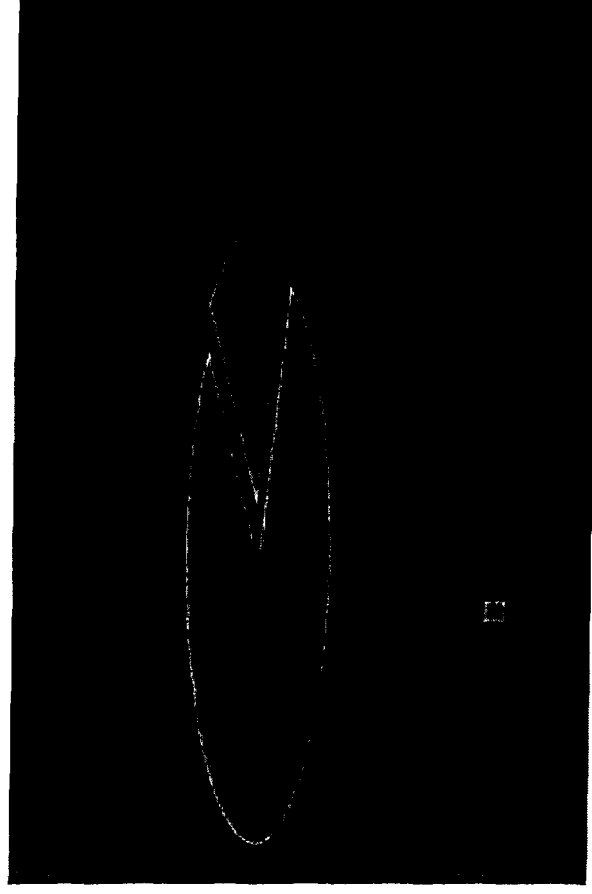
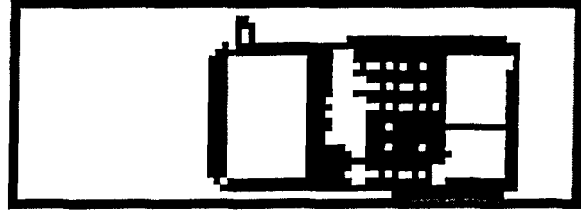
Market Size: Automatic Meter Reading

- ◆ Addressable market size: \$1.6 billion in 2002



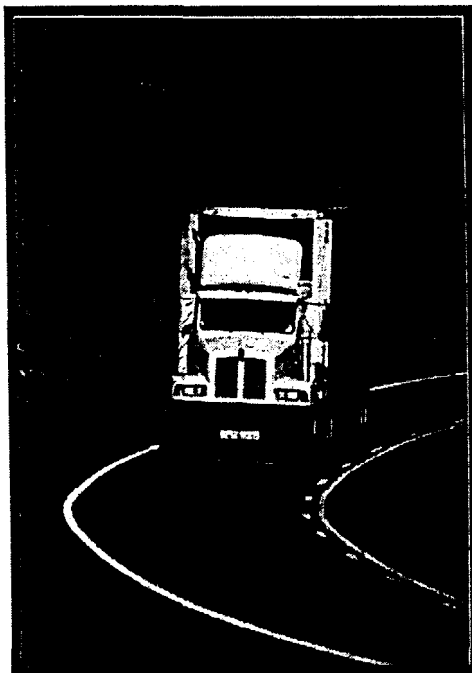
Market Size: Personal Messaging

- ◆ Addressable market size: \$1.5 billion in 2002



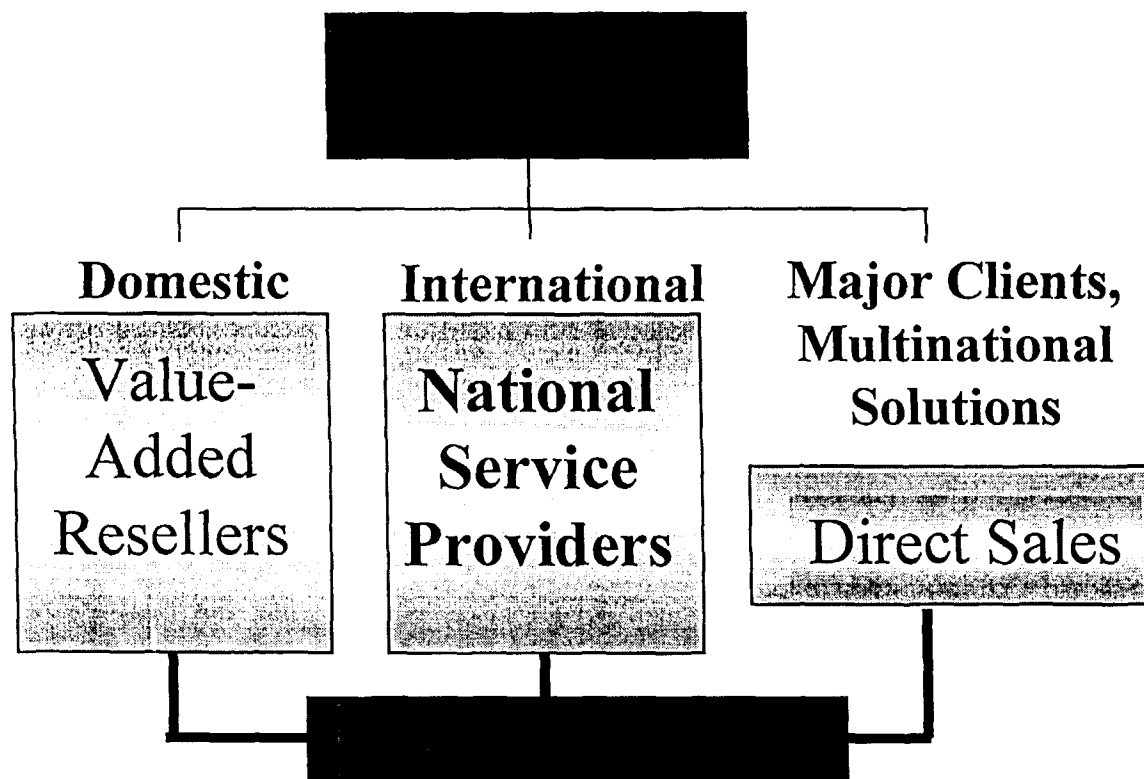
Market Size: Asset Tracking

- ◆ Addressable market size: \$0.2 billion in 2002



The Sales & Service Approach

A Business Development Approach That Relies on
International Trade



Complement Vs. Compete

- ◆ The Final Analysis system offers low cost, narrowband, two-way data messaging for remote fixed and mobile assets
- ◆ The economics dictate that the Final Analysis system is not cost effective in high density areas where terrestrial systems are well established (and therefore are cost effective)
- ◆ The Final Analysis business strategy is to team with the terrestrial system providers of data messaging systems to extend their reach into remote areas where the terrestrial infrastructure is not cost effective

Alliances to extend the product mix and service offering to the customer

International Services

- ◆ Final Analysis will team with local firms to provide sales and service to market segments in which the service is:
 - In demand
 - The solution is competitive



Teaming With Local Firms

Final Analysis will team with local firms to provide sales and services through “solution sets” created by coupling our telecommunications service with local products and services tailored to the application.

National Service Providers and Value-Added Resellers:

- Solution Set Engineering (complimentary products and services)
- Service System Development, Operations, and Maintenance
- Marketing and Sales
- Field Service
- Cross Marketing

Local Industry Development, Economic Gain, Jobs Creation

Frequency Regulation

- **WARC 92 allocated spectrum for little LEOs:**
 - 137-138 MHz and 400.15 -401 MHz downlink
 - 148-150 MHz uplink
- **WRC 95 allocated additional spectrum:**
 - 455-456 downlink (region 2 only)
 - 459-460 MHz uplink (region 2 only)
- **WRC 97 agenda includes additional spectrum allocations**
- **Two experimental licenses, shared global commercial license**
- **Full commercial license pending with FCC**

Country-Specific Regulatory Processes Are Also Required